



# HYGIENETECH

Hygiene Technologies International, Inc.

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September 12, 2012

California State Board of Equalization  
450 N Street  
Sacramento, California 94279

Document No. 21208001.3

Attention: David Gau

Regarding: Occupational Noise Exposure Monitoring and Sound Level Survey  
Mail Room 143

Dear Mr. Gau:

On August 30, 2012, industrial hygienists with Hygiene Technologies International, Inc. (HygieneTech) visited the Mail Room 143 for the purpose of assessing personal occupational noise exposures and area sound levels during mail extracting and processing activities. The employees who participated in the survey included Bobby Yip, William Latham, and Cathye Jimenez. According to the area supervisor, the monitored employees will typically work an 8-hour shift that included approximately two hours on the mail extracting machine. The monitored employees either worked on the mail extracting machines or in their work stations, which were located approximately 20 to 50 feet from the mail extracting machines. Please note that on the survey date, Mr. Yip also performed various routine work activities on the 2<sup>nd</sup> Floor of the building and had left the Mail Room 143 for a period totaling approximately three hours and twenty minutes. Also on the survey date, Mr. Lathan wore earplugs while working at the mail extracting machine.

Quest "Edge 5" audio dosimeters were used to determine employee exposures to noise. The dosimeters were calibrated before and after the survey using a Quest Model QC-10 calibrator. The resultant data, along with supporting information, are provided in Table 21208001-3, in Appendix A of this report. In that table, we have expressed employee noise exposure determinations as exposure dose in units of percent of the 8-hour time-weighted average (TWA) permissible exposure limit (PEL) of 90 decibels, A-weighted scale (dBA), slow response, with an instrument doubling rate of five decibels as defined by the State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) in accordance with Title 8 of the California Code of Regulations (T8 CCR), Article 105. For the purposes of this survey, the maximum employee exposure to noise has been calculated assuming a worst-case scenario, or maximum work shift length of eight hours, based on the noise levels recorded on the survey date. The table shows 8-hour TWA data using all noise exposure values at 80 dBA and above, which should be used when evaluating the need for a hearing conservation program as defined in T8, CCR § 5097(b). The equivalent 8-hour TWA dose was calculated for each participating employee. These calculations were made using the following formula:



$$\text{8-hour TWA} = 16.61 \log_{10} \frac{D}{100} + 90$$

Where: D = Accumulated dose (in percent)

Additionally, sound level measurements were recorded on the survey date in the mail extracting machine areas and the employee work station areas using a Quest NoisePro DL audio dosimeter. Before and after the survey, the instrument was calibrated in accordance with the manufacturer's specifications using a Quest Model QC-10 calibrator. At each sampling location, the sound levels were read for approximately five minutes to determine a range of decibel levels during that time interval. Note that decibels were measured in dBA. The sound level data recorded at the time of the survey are provided in the enclosed Table 21208001-4, which appears in Appendix A. As noted in the table, peak sound level measurements recorded in the surveyed areas on the survey date ranged between 61.9 to 76.6 dBA.

As shown in Table 21208001-3, based on all recordable sound levels ranging from 80 to 140 dB, the personal noise exposure data indicated that the monitored employees were exposed to 8-hour TWA levels ranging from 52.2 to 70.1 dBA, which were all below the Cal-OSHA 8-hour TWA action level of 85 dBA and the Cal-OSHA PEL of 90 dBA. Note that employees performing similar operations to those employees monitored can be expected to have similar noise exposures.

Based on the survey results and our observations, we offer the following comments and recommendations:

- 1) All monitored individuals in Mail Room 143 were exposed to 8-hour TWA noise levels that were below the Cal-OSHA PEL of 90 dBA and action level of 85 dBA. Such occupational noise exposures are not expected to result in significant threshold shifts in hearing acuity and do not require compliance with the Cal-OSHA hearing conservation requirements. The monitored employees, while not required, may wear hearing protection on a voluntary basis.
- 2) An accurate record of all monitoring results should be maintained in accordance with Cal-OSHA regulation T8, CCR § 3204. All affected employees should be informed that the exposure data in this report exist and that they, or their representative, have a right to access relevant exposure data and medical records.
- 3) If the data provided with this report are not expected to represent employee exposure potentials due to changes in environmental conditions, mechanical systems, work activities, or other factor(s), then additional monitoring should be performed in order to accurately define noise exposure data.

If you have any comments or questions regarding the information contained in this correspondence, or if we can be of additional assistance, please feel free to contact our offices directly at (310) 370-8370.

Sincerely,

**HYGIENE TECHNOLOGIES INTERNATIONAL, INC.**

Kenny K. Hsi, CIH  
Technical Director

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## APPENDIX A



**TABLE 21208001-3  
NOISE EXPOSURE SURVEY RESULTS  
MAIL ROOM 143  
450 N STREET  
SACRAMENTO, CALIFORNIA  
AUGUST 30, 2012**

NAME/ REFERENCE	LOCATION/ ACTIVITIES	HEARING PROTECTION	START/ STOP	SAMPLE DURATION	SURVEY RESULTS				ACTION LEVEL (dBA)	PEL (dBA)
					% DOSE*	dBA-AVE	dBA-TWA**	dBA-MAX		
Bobby Yip/ OA	Mail Room 143; mail extracting machine #1 and work station located at central portion of room (Approximately 20 feet from the machines)/Mail extracting and processing activities	None	06:17/ 14:18	481 minutes	1.00	56.8	56.8	98.8	85	90
William Lathan/ OA	Mail Room 143; mail extracting machine #2 and work station located at central portion of room (Approximately 30 feet from the machines)/Mail extracting and processing activities	Earplugs***	06:17/ 14:18	481 minutes	0.53	52.2	52.2	106.1	85	90
Cathye Jimenez/ OA	Mail Room 143; mail extracting machine # 3 and work station located at southern portion of room (Approximately 50 feet from the machines)/Mail extracting and processing activities	None	06:16/ 14:17	481 minutes	6.32	70.1	70.1	107.9	85	90

\* The percent dose listed is from data collected by measuring all sound levels from 80 dB to 130 dB. This 80 dBA threshold level is used to determine compliance with Title 8, California Code of Regulations (T8-CCR) Section 5097.

\*\* Calculated 8-hour time-weighted average

\*\*\* Earplugs used while operating mail extracting machine

### LEGEND

dBA: Decibels on the "A" weighted scale

% dose: Dose in percent of exposure

PEL: Cal-OSHA 8-hour time-weighted average permissible exposure limit

dBA-AVE: Average sound level in decibels (A-weighted scale)

dBA-TWA: Equivalent 8-hour time-weighted average in decibels (A-weighted scale)

dBA-MAX: Sound level maximum in decibels (A-weighted scale)

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TABLE 21208001-4  
SOUND LEVEL SURVEY RESULTS  
MAIL ROOM 143  
450 N STREET  
SACRAMENTO, CALIFORNIA  
AUGUST 30, 2012

LOCATION/SITE ACTIVITIES	SAMPLE TIME	SOUND PRESSURE LEVEL (dBA)	COMMENTS
Mail Room 143; mail extracting machine area; approximately four feet above floor/Mail extracting and processing Activities	06:24/06:29	69.2 – 74.0	N/A
	07:29/07:34	69.6 – 74.7	
	08:53/08:58	66.7 – 73.1	
	10:31/10:36	67.8 – 74.8	
	12:22/12:27	69.1 – 76.6	
	13:35/13:40	70.4 – 75.8	
	14:05/14:10	65.3 – 73.8	
Mail Room 143; employee work station area; about 20 feet south of mail extracting machines; approximately four feet above floor/Mail processing activities	06:32/06:37	63.5 – 68.0	N/A
	07:35/07:40	62.8 – 67.0	
	09:01/09:06	63.1 – 68.9	
	10:38/10:43	64.0 – 68.7	
	12:28/12:33	64.3 – 70.2	
	13:42/13:47	63.7 – 67.1	
	14:12/14:17	61.9 – 64.2	

### LEGEND

dBA: Decibels on the "A" weighted scale  
N/A: Not applicable